



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/806,056 | 03/22/2004 | Laura L. Kiessling | 1-00A | 1530 |
| 23713 | 7590 | 09/26/2006 | EXAMINER | |
| GREENLEE WINNER AND SULLIVAN P C 4875 PEARL EAST CIRCLE SUITE 200 BOULDER, CO 80301 | | | SHIBUYA, MARK LANCE | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1639 | |

DATE MAILED: 09/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary
for Applications
Under Accelerated Examination**

Application No.

10/806,056

Applicant(s)

KIESSLING ET AL.

Examiner

Mark L. Shibuya

Art Unit

1639

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Since this application has been granted special status under the accelerated examination program,
NO extensions of time under 37 CFR 1.136(a) will be permitted and a **SHORTENED STATUTORY PERIOD FOR
REPLY IS SET TO EXPIRE:**

ONE MONTH OR THIRTY (30) DAYS, WHICHEVER IS LONGER,
FROM THE MAILING DATE OF THIS COMMUNICATION – if this is a non-final action or a *Quayle* action.
(Examiner: For **FINAL** actions, please use PTOL-326.)

The objective of the accelerated examination program is to complete the examination of an application within twelve months from the filing date of the application. Any reply must be filed electronically via EFS-Web so that the papers will be expeditiously processed and considered. If the reply is not filed electronically via EFS-Web, the final disposition of the application may occur later than twelve months from the filing of the application.

Status

- 1) ☒ Responsive to communication(s) filed on 05 August 2004.
2) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 3) ☒ Claim(s) 1-127 is/are pending in the application.
3a) Of the above claim(s) _____ is/are withdrawn from consideration.
4) ☐ Claim(s) _____ is/are allowed.
5) ☐ Claim(s) _____ is/are rejected.
6) ☐ Claim(s) _____ is/are objected to.
7) ☒ Claim(s) 1-127 are subject to restriction and/or election requirement.

Application Papers

- 8) ☐ The specification is objected to by the Examiner.
9) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
10) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 11) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-127 are pending.

Election/Restrictions

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 66, 68-77, and 92, (and claims 2-88, 90-94, 96-99 and 102-109), drawn to methods of inducing a biological response comprising a multivalent ligand that comprises a molecular scaffold that is a ring opening metathesis polymerization (ROMP) polymer, classifiable in class 585, subclass 353.
 - II. Claims 67, 78-88 and 93, (and claims 2-88, 90-94, 96-99 and 102-109), drawn to methods of inducing a biological response comprising a multivalent ligand that comprises a molecular scaffold that is a atom-transfer radical polymerization (ATRP) polymer, classifiable in class 525, subclass 242.
 - III. Claims 110-117, drawn to a multivalent ligand as in the formula of claim 110, classifiable in class 526, subclass 135.

- IV. Claim 118, drawn to a library of multivalent ligands as in the formula of claim 110, classifiable in class 435, subclass DIG 34.
- V. Claims 119-126, drawn to a multivalent ligand as in the formula of claim 119, classifiable in class 526, subclass 203.
- VI. Claim 127, drawn to a library of multivalent ligands as in the formula of claim 119, classifiable in class 435, subclass DIG 39.

The inventions are distinct, each from the other because of the following reasons:

The Invention of Group I and the Invention of Group II are directed to related processes. The related inventions are distinct if the (1) the inventions as claimed are either not capable of use together or can have a materially different design, mode of operation, function, or effect; (2) the inventions do not overlap in scope, i.e., are mutually exclusive; and (3) the inventions as claimed are not obvious variants. See MPEP § 806.05(j). In the instant case, the inventions as claimed the methods comprising ROMP polymer scaffolds of Group I have different molecular core structures from the ATRP polymer scaffolds of Group II and so have materially different design and mode of operation. Furthermore, the inventions as claimed do not encompass overlapping subject matter, as indicated in the instant specification at p. 18, lines 1-4, p. 21, lines 19-21, and there is nothing of record to show them to be obvious variants.

The Inventions of Groups III and IV and the Inventions of Groups V and VI are directed to related products. The related inventions are distinct if the (1) the inventions as claimed are either not capable of use together or can have a materially different design, mode of operation, function, or effect; (2) the inventions do not overlap in scope, i.e., are mutually exclusive; and (3) the inventions as claimed are not obvious variants. See MPEP § 806.05(j). In the instant case, the inventions as claimed the methods comprising ROMP polymer scaffolds of Groups III and IV have different molecular core structures from the ATRP polymer scaffolds of Groups V and VI and so have materially different design and mode of operation. Furthermore, the inventions as claimed do not encompass overlapping subject matter, as indicated in the instant specification at p. 18, lines 1-4, p. 21, lines 19-21, and there is nothing of record to show them to be obvious variants.

The Inventions of Groups III and V and the Inventions of Groups IV and VI are directed to related products. The related inventions are distinct if the (1) the inventions as claimed are either not capable of use together or can have a materially different design, mode of operation, function, or effect; (2) the inventions do not overlap in scope, i.e., are mutually exclusive; and (3) the inventions as claimed are not obvious variants. See MPEP § 806.05(j). In the instant case, the inventions as claimed the libraries of ligands of Groups III and V and the ligands of Groups IV and VI. Furthermore, the inventions as claimed do not encompass overlapping subject matter, as evidenced in the specification at p. 11, line 26-p. 12, line 15, which contemplates libraries as different

entities from individual ligands, which different properties and uses and there is nothing of record to show them to be obvious variants.

The Inventions of Groups III and V and the Inventions of Groups I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product. See MPEP § 806.05(h). In the instant case the ligands can be used to detect macromolecules, which is a materially different use from inducing a biological response, and aggregating and assembling particles, as in Groups I and II.

The Inventions of Groups IV and VI and the Inventions of Groups I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product. See MPEP § 806.05(h). In the instant case the libraries of Groups IV and VI can be used to screen for ligands, which is a materially different use from inducing a biological response, and aggregating and assembling particles, as in Groups I and II.

Art Unit: 1639

Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art due to their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

3. Claims 1, 89, 95, 100, 101, (and their dependent claims 2-88, 90-94, 96-99 and 102-109), link(s) inventions of Groups I and Group II. The restriction requirement between the linked inventions is **subject to** the nonallowance of the linking claim(s), claims 1, 89, 95, 100, 101. Upon the indication of allowability of the linking claim(s), the restriction requirement as to the linked inventions **shall** be withdrawn and any claim(s) depending from or otherwise requiring all the limitations of the allowable linking claim(s) will be rejoined and fully examined for patentability in accordance with 37 CFR 1.104 **Claims that require all the limitations of an allowable linking claim** will be entered

Art Unit: 1639

as a matter of right if the amendment is presented prior to final rejection or allowance, whichever is earlier. Amendments submitted after final rejection are governed by 37 CFR 1.116; amendments submitted after allowance are governed by 37 CFR 1.312.

Applicant(s) are advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, the allowable linking claim, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application. Where a restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. *In re Ziegler*, 443 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

The examiner has required restriction between product and process claims. Where applicant elects claims directed to the product, and a product claim is subsequently found allowable, withdrawn process claims that depend from or otherwise include all the limitations of the allowable product claim will be rejoined in accordance with the provisions of MPEP § 821.04. **Process claims that depend from or otherwise include all the limitations of the patentable product** will be entered as a matter of right if the amendment is presented prior to final rejection or allowance, whichever is earlier. Amendments submitted after final rejection are governed by 37 CFR 1.116; amendments submitted after allowance are governed by 37 CFR 1.312.

In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103, and 112. Until an elected product claim is found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowed product claim will not be rejoined. See "Guidance on Treatment of Product and Process Claims in light of *In re Ochiai*, *In re Brouwer* and 35 U.S.C. § 103(b)," 1184 O.G. 86 (March 26, 1996). Additionally, in order to retain the right to rejoinder in accordance with the above policy, Applicant is advised that the process claims should be amended during prosecution either to maintain dependency on the product claims or to otherwise include the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.**

Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

Election of Species

4. This application contains claims directed to the following patentably distinct species: An ultimate biological response. The species are independent or distinct because the broad genus of biological response comprises biological responses that have materially different modes of operation, function and effect.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 1, 89, 95 and 101 are generic. Applicant should indicate how the elected species of biological responses read on claims.

5. This application contains claims directed to the following patentably distinct species: An ultimate biological system. The species are independent or distinct because the broad genus of biological response comprises biological responses that have materially different modes of operation, function and effect.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 1, 89, 95 and 101 are generic. Applicant should indicate how the elected species of biological system read on claims.

Art Unit: 1639

6. This application contains claims directed to the following patentably distinct species: A particular receptor. The species are independent or distinct because the broad genus of receptors comprises biological responses that have materially different modes of operation, function and effect.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 1, 89, 95 and 101 are generic. Applicant should indicate how the elected species of receptor read on claims.

7. This application contains claims directed to the following patentably distinct species: A signal recognition element. The species are independent or distinct because the different signal recognition elements apparently have materially different structure, mode of operation, functions and effects.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 1, 89, 95, 101, 110, 118, 119 and 127 are generic. Applicant should indicate how the elected species of SRE read on claims.

8. This application contains claims directed to the following patentably distinct species: A species of binding recognition element or a species of functional element or both. The species are independent or distinct because the different binding recognition

Art Unit: 1639

elements or recognition elements apparently have materially different structure, mode of operation, functions and effects.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 1, 48, 89, 95, 101, 110, 118, 119 and 127 are generic. Applicant should indicate how the elected species of element(s) read on claims.

9. This application contains claims directed to the following patentably distinct species: A covalent bond or a noncovalent bond that binds the signal recognition element to the molecular scaffold. The species are independent or distinct because the different binding recognition elements or recognition elements apparently have materially different structure, mode of operation, functions and effects.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 1, 89, 95, 101, 110, 118, 119 and 127 are generic. Applicant should indicate how the elected species of bond read on claims.

10. This application contains claims directed to the following patentably distinct species: A species of molecular scaffold. The species are independent or distinct because the different binding recognition elements or recognition elements apparently have materially different structure, mode of operation, functions and effects.

Art Unit: 1639

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 1, 64, 89, 95, 101, 110, 118, 119 and 127 are generic. Applicant should indicate how the elected species of scaffold read on claims.

11. This application contains claims directed to the following patentably distinct species: An ultimate species of multivalent ligand. The species are independent or distinct because the different binding recognition elements or recognition elements apparently have materially different structure, mode of operation, functions and effects.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 1, 64, 66-68, 78, 89, 92, 93, 95, 100, 101, 110, 118, 119 and 127 are generic. Applicant should indicate how the elected species of biological responses read on claims.

12. Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Art Unit: 1639

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species.

MPEP § 809.02(a).

13. Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Art Unit: 1639

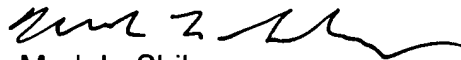
14. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark L. Shibuya whose telephone number is (571) 272-0806. The examiner can normally be reached on M-F, 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Paras can be reached on (571) 272-4517. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1639

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Mark L. Shibuya
Examiner
Art Unit 1639

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☒ BLACK BORDERS
- ☒ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☐ FADED TEXT OR DRAWING
- ☐ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☒ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☐ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.